

Mr. Kevin J. Keane  
Norwood Promotional Products - Renaissance Publishing Co.  
218 East 7<sup>th</sup> Street  
Auburn, IN 46706

Dear Mr. Keane:

Re: Exempt Construction and Operation Status,  
033-11780-00074

The application from Norwood Promotional Products - Renaissance Publishing Co., received on October 2, 2002, has been reviewed. Based on the data submitted and the provisions in 326 IAC 2-1.1-3, it has been determined that the following emission unit, to be located at 218 East 7<sup>th</sup> Street, Auburn, Indiana, is classified as exempt from air pollution permit requirements:

- (a) One (1) natural gas-fired boiler, rated at 10.2 million British thermal units (MMBtu) per hour.
- (b) Small printers with insignificant emissions.

The following conditions shall be applicable:

- (1) Pursuant to 326 IAC 5-1-2 (Opacity Limitations) except as provided in 326 IAC 5-1-3 (Temporary Exemptions), opacity shall meet the following:
  - (a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
  - (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of 15 minutes (60 readings) in a 6-hour period as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor in a six (6) hour period.
- (2) Pursuant to 326 IAC 6-2-3 (Particulate Emission Limitations for Sources of Indirect Heating: Emission Limitations for facilities specified in 326 IAC 6-2-1(c), the particulate matter emission from the boiler, with a maximum rated capacity of 10.2 mmBtu per hour, constructed before September 21, 1983, shall be limited to 0.8 pounds per mmBtu.
- (3) Any change or modification which may increase the actual emissions of VOC to fifteen (15) pounds per day from this source shall require approval from IDEM, OAQ, prior to making the change.
- (4) Any change or modification which may increase the potential to emit of a combination of HAPs to twenty-five (25) tons per year or a single HAP to ten (10) tons per year from this source shall require approval from IDEM, OAQ, prior to making the change.

# **Indiana Department of Environmental Management Office of Air Quality**

## **Technical Support Document (TSD) for an Exemption**

### **Source Background and Description**

<b>Source Name:</b>	<b>Norwood Promotional Products - Renaissance Publishing Co.</b>
<b>Source Location:</b>	<b>318 East 7<sup>th</sup> Street, Auburn, IN 46706</b>
<b>County:</b>	<b>Dekalb</b>
<b>SIC Code:</b>	<b>2741</b>
<b>Exemption No.:</b>	<b>033-11780-00074</b>
<b>Permit Reviewer:</b>	<b>Madhurima D. Moulik</b>

The Office of Air Quality (OAQ) has reviewed an application from Norwood Promotional Products - Renaissance Publishing Company, relating to the construction and operation of a 10.2 mmBtu per hour natural gas-fired boiler.

### **Emission Units and Pollution Control Equipment**

The source consists of the following facilities/units:

- (a) One (1) natural gas-fired boiler, rated at 10.2 million British thermal units (MMBtu) per hour.

The source has some small printers with insignificant emissions.

### **Enforcement Issue**

There are no enforcement actions pending.

### **Recommendation**

The staff recommends to the Commissioner that the construction and operation be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

A complete application for the purposes of this review was received on October 2, 2002.

### **Emission Calculations**

See Appendix A of this document for detailed emissions calculations.

### **Potential To Emit**

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as “the maximum capacity of a stationary source or emissions unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of

material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA, the department, or the appropriate local air pollution control agency.”

Pollutant	Potential To Emit (tons/year)
PM	0.3
PM-10	0.3
SO <sub>2</sub>	-
VOC	0.2
CO	3.8
NO <sub>x</sub>	4.5

- (A) The potential to emit (as defined in 326 IAC 2-7-1(29)) of all criteria pollutants are less than the levels listed in 326 IAC 2-1.1-3(d)(1). Therefore, the source is subject to the provisions of 326 IAC 2-1.1-3, and will be granted an Exemption.

### County Attainment Status

The source is located in Dekalb County.

Pollutant	Status ( <b>attainment, maintenance attainment, or unclassifiable; severe, moderate, or marginal nonattainment</b> )
PM-10	attainment
SO <sub>2</sub>	attainment
NO <sub>2</sub>	attainment
Ozone	attainment
CO	attainment
Lead	attainment

- (a) Volatile organic compounds (VOC) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. Dekalb County has been designated as attainment or unclassifiable for ozone. Therefore, VOC emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.
- (b) Dekalb County has been classified as attainment or unclassifiable for all other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

### Part 70 Permit Determination

#### 326 IAC 2-7 (Part 70 Permit Program)

This new source is not subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

- (a) each criteria pollutant is less than 100 tons per year,
- (b) a single hazardous air pollutant (HAP) is less than 10 tons per year, and
- (c) any combination of HAPs is less than 25 tons/year.

This is the first air approval issued to this source.

### Federal Rule Applicability

- (a) The 10.2 MMBtu per hour natural gas-fired boiler is not subject to the requirements of the New Source Performance Standard, 326 IAC 12, (40 CFR 60.40c - Subpart Dc), since this boiler was installed in 1947, which is prior to the applicability date of June 9, 1989.
- (b) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs)(326 IAC 14 and 40 CFR Part 63) applicable to this source.

### State Rule Applicability - Entire Source

#### 326 IAC 2-6 (Emission Reporting)

This source is located in Dekalb County and the potential to emit of all criteria pollutants is less than one hundred (100) tons per year. Therefore, 326 IAC 2-6 does not apply.

#### 326 IAC 5-1 (Visible Emissions Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Exemptions), opacity shall meet the following, unless otherwise stated in this permit:

- (a) Opacity shall not exceed an average of forty percent (40%) any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

### State Rule Applicability - Individual Facilities

#### 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))

The operation of the boiler at the source will emit less than 10 tons per year of a single HAP or 25 tons per year of a combination of HAPs. Therefore, 326 IAC 2-4.1 does not apply.

#### 326 IAC 6-3-2 (Process Operations)

Combustion processes for indirect heating are exempt from this rule. Therefore, 326 IAC 6-3-2 does not apply to the boiler at the source.

#### 326 IAC 6-2-3 (Particulate Emission Limitations for Sources of Indirect Heating)

326 IAC 6-2-3 applied to sources of indirect heating that were constructed and in operation before September 21, 1983. Therefore, the boiler at this source, installed in 1947, is subject to this rule. Pursuant to 326 IAC 6-2-3, the particulate emissions from the boiler shall be limited by the following equation:

$$Pt = \frac{C \times a \times h}{76.5 \times Q^{0.75} \times N^{0.25}}$$

where:

C = maximum ground level concentration with respect to distance from the point source at the "critical" wind speed for level terrain. This shall equal 50 micrograms per cubic meter for

a period not to exceed a sixty (60) minute time period.

Pt = Pounds of particulate matter emitted (lb/mmBtu)

Q = Total source maximum operating capacity in million Btu per hour heat input = 10.2 mmBtu per hour

N = Number of stacks = 1

a = Plume rise factor = 0.67 (for Q < 1000 mmBtu/hr)

h = Stack height in feet = 31 ft

Therefore, Pt = 2.3 lb of PM/mmBtu from equation.

Pursuant to 326 IAC 6-2-3(d), PM is limited to 0.8 lb/mmBtu for boilers constructed before 1972. Therefore, PM from the boiler at the source is limited to 0.8 lb/mmBtu = 8.16 lb/hr = 35.7 tons per year. The potential to emit of PM for the boiler is less than this limit. Therefore, the boiler is in compliance with this rule.

## Conclusion

The construction and operation of the 10.2 MMBtu per hour boiler shall be subject to the conditions of the attached proposed Exemption No. 033-11780-00074.

This exemption is the first air approval issued to this source.  
Norwood Promotional Products-Renaissance Publishing  
Auburn, Indiana

Page 2 of 2  
Exemption No. 033-11780-00074

An application or notification shall be submitted in accordance with 326 IAC 2 to the Office of Air Quality (OAQ) if the source proposes to construct new emission units, modify existing emission units, or otherwise modify the source.

Sincerely,

Paul Dubenetzky, Chief  
Permits Branch  
Office of Air Quality

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cc: File - Dekalb County  
Dekalb County Health Department  
Air Compliance - Doyle Houser  
Northern Regional Office  
Permit Tracking  
Technical Support and Modeling - Michele Boner  
Compliance Data Section - Karen Nowak

## Appendix A: Emissions Calculations

### Natural Gas Combustion Only

MM BTU/HR <100

Small Industrial Boiler

Company Name: Renaissance Publishing Company

Address City IN Zip: 218 E. 7th Street, Auburn, IN 46706

CP: 033-11780

Plt ID: 033-00074

Reviewer: Madhurima D. Moulik

Date: Oct 10, 2002

Heat Input Capacity  
MMBtu/hr

Potential Throughput  
MMCF/yr

10.2

89.4

Pollutant						
Emission Factor in lb/MMCF	PM* 1.9	PM10* 7.6	SO2 0.6	NOx 100.0 **see below	VOC 5.5	CO 84.0
Potential Emission in tons/yr	0.1	0.3	0.0	4.5	0.2	3.8

\*PM emission factor is filterable PM only. PM10 emission factor is condensable and filterable PM10 combined.

\*\*Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

### Methodology

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

Note: Check the applicable rules and test methods for PM and PM10 when using the above emission factors to confirm that the correct factor is used (i.e., condensable included/not included).

See page 2 for HAPs emissions calculations.

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updated 4/99

**Appendix A: Emissions Calculations****Natural Gas Combustion Only****MM BTU/HR <100****Small Industrial Boiler****HAPs Emissions****Company Name: Renaissance Publishing Company****Address City IN Zip: 218 E. 7th Street, Auburn, IN 46706****CP: 033-11780****Plt ID: 033-00074****Reviewer: Madhurima D. Moulik****Date: Oct 10, 2002****HAPs - Organics**

Emission Factor in lb/MMcf	Benzene 2.1E-03	Dichlorobenzene 1.2E-03	Formaldehyde 7.5E-02	Hexane 1.8E+00	Toluene 3.4E-03
Potential Emission in tons/yr	9.382E-05	5.361E-05	3.351E-03	8.042E-02	1.519E-04

**HAPs - Metals**

Emission Factor in lb/MMcf	Lead 5.0E-04	Cadmium 1.1E-03	Chromium 1.4E-03	Manganese 3.8E-04	Nickel 2.1E-03
Potential Emission in tons/yr	2.234E-05	4.914E-05	6.255E-05	1.698E-05	9.382E-05

Methodology is the same as page 1.

The five highest organic and metal HAPs emission factors are provided above.

Additional HAPs emission factors are available in AP-42, Chapter 1.4.